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Take-home naloxone and the politics of care

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Conflicts of interest

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work with, past 3 years, Martindale, Indivior, Mundipharma (all of whom have naloxone products). His employer (King's College London) has also registered intellectual property on a novel buccal naloxone formulation, naming John Strang and colleagues, and he was earlier named in a patent registration by a pharmaceutical company regarding concentrated nasal naloxone spray. John Strang and colleagues have worked as consultants for the United Nations Office on Drugs and Crime, supporting them with a project introducing take-home naloxone to four central and western Asian countries.

Take-home naloxone and the politics of care

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Abstract

'Take-home naloxone' refers to a life-saving intervention in which a drug (naloxone) is made available to non-medically trained people for administration to other people experiencing an opioid overdose. In Australia, it has not been taken up as widely as would be expected, given its life-saving potential. We consider the actions of take-home naloxone, focusing on how care relations shape its uses and effects. Mobilising Science and Technology Studies insights, we suggest that the uses and effects of naloxone are co-produced within social relations and, therefore, this initiative 'affords' multiple outcomes. We argue that these affordances are shaped by a politics of care, and that these politics relate to uptake. We analyse two complementary case studies, drawn from an interview-based project, in which opioid consumers discussed take-home naloxone and its uses. Our analysis maps the ways take-home naloxone can afford (1) a regime of care within an intimate partnership (allowing a terminally ill man to more safely consume opioids) and (2) a political process of care (in which a consumer takes care of others treated with the

medication by administering it 'gently'). We conclude by exploring the political affordances of a politics of care approach for the uptake of take-home naloxone.

Keywords: Take-home naloxone, opioid overdose, care, Science and Technology Studies

Introduction

In recent years, opioid overdose deaths have escalated in Australia and around the world (Roxburgh et al. 2017). This has prompted new interest in the provision of the opioid antagonist naloxone as a 'take-home' medicine for people who consume opioids (McDonald, Campbell & Strang 2017). Put simply, take-home naloxone programs seek to make available naloxone products to non-medically trained people to administer to people experiencing an opioid overdose. While research indicating the effectiveness of take-home naloxone to save lives continues to build, uptake and diffusion of these programs remains limited. Reasons for this are currently being researched (Black et al. 2017) and one area needing further examination is how it shapes and is shaped by social relations. In this article we ask, do the social dimensions of take-home naloxone bear on its diffusion and uptake, and if so how? Drawing on an interview-based project that explores the reasons for the inertia around take-home naloxone, we identify what, following Martin, Myers and Viseu (2015), we call a complex politics of care. We explore two case studies of opioid consumption and overdose and analyse the ways in which, in these accounts, take-home naloxone shapes and is shaped by relations of care.

To approach these caring uses of naloxone, we draw on Science and Technology Studies, in particular, Bruno Latour's (2002) suggestion that all technologies (such as take-home naloxone) are co-produced within social relations and, that these complex relations mean they cannot determine how they are used but rather 'afford' multiple possibilities of use. Building on this, we also draw on the work of Annemarie Mol (2008) to approach take-home naloxone as implicated in a politics of care. Given the marginalisation and sitgmatisation of many people who consume opioids, we argue that these affordances and the politics of care in which they are immersed need to be understood within the power relations that co-produce both overdose and notions of care themselves. The affordances we explore suggest that take-home naloxone programs offer more than an 'emergency medicine' or tool solely for use in overdose

emergences (as it is usually framed). Shaped by the desire to care for the recipient beyond immediate revival, take-home naloxone uptake needs to be understood using more complex questions than are usually asked about it (common questions include, for example, how many administration kits have been distributed and used). The first case study presented here explores an account in which take-home naloxone affords a regime of care within an intimate partnership to allow a terminally ill man to continue to consume opioids in a context where his dose and chance of overdose has become relatively high. The second case study explores an account in which the administration of take-home naloxone entails a politically inflected process of care. In this process the participant adopts an especially cautious or 'gentle' dosing approach with which he hopes to avoid producing unnecessary painful withdrawal symptoms. Together, these case studies highlight an emergent politics of care that takes shape through take-home naloxone practices. Through our analysis we develop a politics of care approach to this initiative which allows new perspectives on naloxone and the uptake of take-home programs specifically. In emphasising the social relations of care, this approach can illuminate the destigmatising potential of these programs, and contribute to the development of delivery strategies that reduce unnecessary discomfort. In doing this, the approach can also provide a more ethically considered basis for encouraging uptake, in that it ensures that opioid overdose and related deaths, to which people who consume opioids are enjoined to respond, are not abstracted from the broader social and political arrangements that co-produce them.

Background

Reflecting worldwide trends, Australia has seen increases in the consumption of opioids (AIHW 2017). The majority of those who inject drugs in Australia report recent (last six months) consumption of heroin: 57 per cent nationally, while in New South Wales and Victoria, Australia's two most populous states, 80 per cent in each state report recent heroin consumption (Karlsson & Burns 2018: 16). Recent Australian research identified 8547 opioid overdose deaths during the period 2001-2012, with heroin overdose deaths rates remaining steady while pharmaceutical overdose deaths increased by 1.6 times (Roxburgh et al. 2017). Over time opioid overdoses have prompted a number of responses such as education and training activities for opioid consumers on how to respond to overdose. The supply of

naloxone to people who may find themselves present at an opioid overdose is, in Australia and many other countries, another strategy aimed at reducing lives lost to overdose.

Naloxone has been successfully used in emergency settings for over 40 years (Lenton et al. 2015). This success has prompted researchers in a number of countries such as the United Kingdom, Australia and the United States to argue that it should be made available to non-medically trained people as well (Strang & Farrell 1992, Darke & Hall 1997, McDonald, Campbell & Strang 2017). While take-home naloxone programs have been slowly emerging in a number of countries since the late 1990s (McDonald, Campbell & Strang 2017), it was only in 2012 that the first take-home naloxone program was initiated in Australia (Lenton et al. 2015). As of early 2018, programs of various scales had been established in all but three Australian jurisdictions (Dwyer, Olsen, et al. 2018). Importantly, the scheduling of naloxone in Australia has recently changed from prescription-only to pharmacist-provided over-the-counter access (Lenton, Dietze & Jauncey 2016). Also, since programs first commenced in Australia, the naloxone provided has been packaged in different ways, and is now supplied in a multi-dose syringe. An intranasal naloxone product, available overseas, is not yet available in Australia (Dwyer, Olsen et al. 2018).

While take-home naloxone schemes are gradually being introduced in Australia, uptake remains largely confined to clients of harm reduction services targeting people who inject drugs. Although research suggests that people who consume opioids are often willing to participate in overdose response training and administer naloxone during an overdose (e.g. Lagu, Anderson & Stein 2006, Lankenau et al. 2013), knowledge of its availability and uptake by the primary targets of the current strategies, people who inject opioids, remains patchy (Dietze et al. 2017).

Literature review

Research suggests that many opioid consumers who are aware of the availability of take-home naloxone choose not to access it (Dietze et al. 2015). Investigations into this dynamic have identified a number of barriers, including practical impediments such as the expense of over-the-counter purchasing (Dwyer,

Fraser & Dietze 2016) and time and funding constraints on relevant alcohol and other drug services (Dwyer, Fraser & Dietze 2016). Other reasons identified include the fear of police involvement in an overdose (Lagu et al. 2006, Wright et al. 2006), burdensome feelings of responsibility to administer naloxone in distressing overdose events (Neale & Strang 2015) and limited supply options (McLean 2016). Finally, perceptions of naloxone's capacity to stimulate uncomfortable and painful withdrawal symptoms can render opioid consumers reluctant to administer or be administered with it (Neale & Strang 2015). The latter concern indicates that negative experiences of being administered naloxone, whether in a healthcare setting or elsewhere, may reduce desire to access the drug in the future (Neale & Strang 2015).

Perhaps due to the emphasis in this area of inquiry on quantitative public health research approaches, research on take-home naloxone very rarely asks broader sociological questions of the intervention (Farrugia, Fraser & Dwyer 2017). That is, the socially produced nature of opioid overdose and how take-home naloxone operates within wider public health policies and interventions are issues rarely addressed in this area of research. A notable exception here is Faulkner-Gurstein's (2017) article in which she argues that, by harnessing social networks of people who consume opioids, this intervention has the scope to constitute their relationships as potentially health producing and protective. While the dynamic Faulkner-Gurstein (2017) identifies could be said to reposition people who consume opioids with positive social identities, and potentially alleviate stigma (see also Buchman, Leece & Orkin 2017), take-home naloxone programs are also open to criticism as responsibilising the marginalised for combatting harms exacerbated, if not produced, by structural inequality and prohibitionist drug policies (Farrugia, Fraser & Dwyer 2017, Buchman et al 2018). That is, the intervention does little to address the social production of overdose to begin with and has limited potential without other interventions to address political-economic issues that shape the contexts in which the take-home naloxone is made available (McLean 2016). The small corpus of studies discussed above emphasises the importance of social relations in shaping take-home naloxone programs, pointing to key areas for consideration. However, further exploration of how the technology shapes and is re-shaped by social relationships is required, especially in relation to its political implications.

Making a different but equally socially oriented point, Neale and Strang (2015) argue that unless naloxone is administered with a high level of care and concern, issues such as excessive dosing can 'result in reputational damage to the emergency services and their resuscitation efforts, such that […] naloxone is transformed from a life-saving medication delivered by caring practitioners into a painful and withdrawal-precipitating punishment administered by a hostile work-force' (1649). Importantly, such effects can shape future practices in ways that increase the dangers relating to opioid overdose (Strang et al. 2017). Such questions of care have been identified as highly relevant to the success or otherwise of health measures (Buse, Martin & Nettleton 2018, Gill, Singleton & Waterton, 2017), and researchers have begun exploring the benefits of focussing on care in alcohol and other drug research, policy and practice. Race (2008), for example, argues that prioritising the non-normative modes of care already practised by people who consume drugs has significant harm reducing potential. Similarly, research on injecting practices within intimate relationships emphasises how practices of care shape the sharing of injecting equipment (Fraser, Rance & Treloar 2016). Other researchers explore care in alcohol and other drug service provision. For example, Leppo & Peräla (2017) analyse the relational production of care practices in opioid substitution treatment and how they may be restricted by austere funding arrangements, while Peräla (2015) argues that particular treatment approaches and practices can offer people who consume drugs important forms of self-care. Researchers have also begun to explore the implications of a focus on care for alcohol and other drug policy (e.g. Duff 2015, Dennis & Farrugia 2017). Importantly, the emergence of care in this area of research has also attracted scepticism. For example, Sybylla (2001) identifies a disempowering normalising and paternalistic logic at work in care-oriented policy and treatment for women consuming drugs while pregnant. Critical approaches to care are essential to analysis of take-home naloxone, the subjects of which often face stigma, marginalisation and other forms of disadvantage (Fraser et al. 2017, Ritter et al. 2011). As such their rights are routinely violated and denied in many settings, and they may be subject to paternalistic health policies and treatment regimes. While sociological research on care continues to build, to date, these explorations of care and their political implications have not informed take-home naloxone research.

In sum, available critical social science literature points to the importance of analysing the social relationships in which take-home naloxone is immersed. Our article contributes to this area of research in three ways: (1) it builds on public health research by analysing in-depth how interpersonal relations shape the use and meanings of take-home naloxone technology, (2) it builds on sociological research by investigating how the technology of take-home naloxone re-constitutes the social relationships of which it is a part, and (3) it broadens conceptualisations of the initiative and what it achieves by focussing on reciprocal relations of care between people who access it.

A politics of care approach

Our analysis of the interpersonal relations of care implicated in take-home naloxone provision and administration necessitates a conceptual orientation that accounts for the co-productive relationship between people, society and technology. To this end, we draw on recent work in Science and Technology Studies (STS) that has proved particularly useful for alcohol and other drug researchers, including those focused on drug injection technologies (Fraser 2013, Vitellone 2017). STS offers some key thinking on questions of care (e.g. Buse, Martin & Nettleton 2018, Latimer 2018, Mol 2008, Puig de la Bellacasa 2017), and the potential of this work for alcohol and other drug research has only recently begun to be mined (see Dennis & Farrugia 2017).

STS offers a relational and performative approach in which the world does not pre-exist the practices traditionally thought to 'discover' it, but instead is made or articulated in and through those practices, that is, in and through specific relations between humans, non-human living beings, ideas and technologies (Law 2004). As explored by Martin, Myers and Viseu (2015), when care is put to work in STS-orientated research it produces two mutually implicated 'layers of care':

1. 'that which we, as STS scholars, teachers, and feminists enact in *our relations with* the worlds we study', and

2. 'that which *circulates among the actors* in the technoscientific worlds we encounter through our studies.' (original emphasis, 626)

This suggests that alcohol and other drug research necessarily operationalises particular notions of care and, as such, this research is an unavoidably political act. Following this formulation, we can say that our research operationalises certain kinds of care in its practice (point 1), and it also works to identify and analyse the practices of care at work in the field of study (point 2). In both these ways, research is a practice that works to emphasise some political possibilities and not others. While it is the forms of care identified in point 2 (those that circulate within, and emerge from, take-home naloxone administration practices) to which we most explicitly attend in our analysis, these two forms are care are thoroughly mutually implicated. We focus on these forms of care for the ways they contrast with conventional accounts of take-home naloxone provision as simply focused on providing an emergency technology whose only role is to reverse respiratory depression. As we will argue, for some it is much more than this, and affords other possibilities. The production of specific forms of care is one possibility that emerges in the accounts of take-home naloxone administration that appear below. In our analysis we consider how care is made and re-made in ways not generally accounted for in traditional approaches to naloxone administration, the aim being to enrich understandings of this technological field to better inform questions about uptake and diffusion.

Given the central importance of equipment, such as the needle, syringe and the naloxone itself, to this intervention, we ask how we can account for the role of technology in the forms of care generated through overdose responses. In a 2002 article, Bruno Latour argues that within social science research, technologies are generally approached in one of two ways: (1) as neutral objects for enacting human will or (2) as objects with fixed meaning which determine their possible use and are therefore reliably able to reproduce particular expectations (see Fraser 2013). Moving beyond these alternatives, Latour argues that technologies and humans are unavoidably co-mingled. Subjects do not merely use tools or master objects, rather, the relationships between technologies and people produce specific 'affordances' – non-determining possibilities for actions and possible subject positions:

> Technologies bombard human beings with a ceaseless offer of previously unheard-of positions – engagements, suggestions, allowances […] Generalizing the notion of affordance, we could say that the quasi-subjects which we all are become such thanks to the quasi-objects which populate our universe with minor ghostly beings similar to us and whose programmes of action we may or may not adopt. (Latour 2002: 252-253)

In other research, the notion of affordance is put to work on the related topic of injection fitpacks (injecting equipment) (Fraser 2013). The article argues that as a technology fitpacks offer affordances, that is, capacities and possibilities at once (also see Fraser et al. 2017 for outcomes of this approach). Importantly for Latour, if technologies inform action, create affordances and modulate intentions and aspirations, they are necessarily intertwined with what he terms 'morality' and are therefore active in social relations and social events and practices. In the approach we take here, take-home naloxone initiatives do not simply make available a neutral naloxone technology that is then taken home and stored solely for emergency reversal of opioid-induced respiratory depression. Rather, take-home naloxone programs create an active technology that produces particular affordances, and these shape and are shaped by our ethical and political landscape, including possibilities for care that bear on the question of uptake. For example, if naloxone is not administered with the right care it can produce distressing withdrawal sensations and although it affords the capacity to save a life, it also affords the capacity to shock, withdraw pleasure and even punish (Neale & Strang 2015). In this sense, the naloxone provided through such programs creates affordances distinct from the naloxone administered in a hospital or other health setting. As such, our references to 'take-home naloxone' relate to the affordances enacted through the combination of drug, equipment, setting and public health injunction, rather than to the effect of the drug naloxone alone.

In her exploration of a different medication, insulin, Mol (2008) considers how technologies shape moral landscapes of care:

> Nowadays, if you happen to have diabetes and refuse to inject insulin, this amounts to committing suicide. As a result of manufacturing insulin, 'not injecting' has become a lethal act,

> and hence a moral activity […] Technologies […] shift both the practical and the moral frameworks of our existence. (89-90)

By affording the capacity to manage diabetes, the commercial manufacture of insulin also affords particular moral landscapes and possibilities of care, as well as particular subjects of care. As with the targets of public health interventions for diabetes such as the manufacture and supply of insulin, the targets of take-home naloxone interventions are also responsibilised to save lives. Given these significant effects, questions need to be asked about naloxone provision, including what other resources are provided to those asked to take it up, or what risks of sanction accompany those unable to revive the person even after administration (Farrugia, Fraser & Dwyer 2017).

Like the technologies implicated in care, the concept of care itself is not a straightforward. What it means to care and be cared for is shaped by political commitments which produce specific forms of intervention and obligation, and these may be experienced as caring by some but unwanted or uncaring by others (Singleton & Mee 2017). These issues, implicated in all attempts to care, and in all research on it, mean we need to analyse not only what we perceive as acts of care but the 'conditions of possibility of care' that frame them (Martin, Myers & Viseu 2015). In analysing modes and technologies of care and the conditions of possibility within which they emerge, we unavoidably take part in a politics of care that includes and attends to some lives and practices and neglects, ignores or excludes others.

> Care is a selective mode of attention: it circumscribes and cherishes some things, lives, or phenomena as its objects. In the process, it excludes others. Practices of care are always shot through with asymmetrical power relations: who has the power to care? (Martin, Myers & Viseu 2015: 627)

The implication of care and power lead Martin, Myers and Viseu (2015) to theorise a notion of 'critical care', calling on STS researchers to ask political and ethical questions of the realities of care they enact in their research. Despite its benevolent tone, care is not an innocent discourse, and research on care must not obscure or conceal the ethics and politics of attempts to care (e.g. Murphy 2015). Those who administer naloxone participate in critically important practices of care that directly save lives, yet they

often face discrimination and material deprivation and fulfill this role with very limited resources. Importantly, they may also face poor experiences through their attempts to care, such as negative interactions with police or paramedics and conflict with the person who has received the naloxone (Black et al. 2017). This is why we emphasise the politics of care here, and seek to stress the importance of practices of care produced in administration events while also seeking to hold the unevenly distributed possibilities of care at the front of an analysis of overdose responses. Perhaps most strikingly for the politics of care in relation to take-home naloxone, as our analysis will explore, people who consume opioids are routinely stigmatised as careless and uncaring (Taylor 2008), yet they enact forms of care from which many others baulk, under very restricted conditions of possibility. Mindful of the politics of care, we approach take-home naloxone as contingently co-producing different capacities for, and subjects of, care. These all bear on when, how, why and in what ways the technology is distributed, taken up and applied.

Method

This article draws on data collected for a qualitative research project on take-home naloxone. Designed to gather in-depth perspectives on the meanings of take-home naloxone for opioid consumers and health professionals[i], it will shed light on impediments to scale-up, including the role of stigma. The study used a purposive data collection strategy to recruit and interview 46 opioid consumers across the Australian states of New South Wales and Victoria. Prospective participants were screened to ensure variation between types of opioids consumed (including for chronic pain), experience with take-home naloxone, gender, age, ethnicity, socio-economic background. All participants provided informed written consent. The first and fourth author conducted in-depth semi-structured interviews that explored participants' experiences of opioid consumption and overdose, awareness of, and experience with, take-home naloxone, access to take-home naloxone, experience with, and opinions of, overdose response training and different take-home naloxone products (e.g. intranasal or intramuscular administration equipment). Interviews were conducted in private rooms of alcohol and other drug services, university offices or public places such as libraries and cafes. They were digitally recorded and participants were reimbursed

AUD50 in recognition of their time and contribution to the research. All interview recordings were transcribed verbatim and the transcripts imported into QSR Nvivo 11 for data management and coding.

The study was approved by Curtin University's Human Research Ethics Committee (HRE2017-0168/2017).

The analysis conducted for this article has been approached using a case study method, a method about which STS has much to say. We draw on Mol and Law's (2002) argument that cases are productive because they can offer 'partially translatable' insights emerging from their ability to sensitise us to previously unrecognised events and situations (see Fraser & Seear 2011, for more on this approach). In this way, while our primary goal is to offer deeper insight into the expectations, experiences and relations co-produced by take-home naloxone, the forms of care and responsibility emerging with it can act as a case for analysis of other health initiatives (Fraser & Seear 2011). In choosing the two cases presented in this article we focused on those offering rich detail and nuanced ways of discussing the different sets of interpersonal relations implicated in events of administration. In this respect they were selected for their potential utility for in-depth analysis. Importantly, while this article focuses on these two cases, discussions of care practices were common in the interview data. Our encounters with these two cases moved us to position care as a focus for our analysis of take-home naloxone (Martin, Myers & Viseu, 2015). Both case studies emphasise the multiple affordances created by take-home naloxone interventions, shed light on relevant previously unexamined aspects, and help us to rethink assumptions. As we will argue in the analysis that follows, focusing on the cases presented here allows us to:

1. become sensitised to the particular operations and dynamics of care that give meaning to take-home naloxone use;
2. consider how issues of care of the kind illustrated here might be translatable, if partially, to broader questions about uptake and diffusion of the technology;
3. rethink assumptions and expectations about people who consume heroin and their relationship to caring, and;
4. shed light on critical matters such as stigma and structural disadvantage.

Analysis

In what follows we explore two specific cases in which take-home naloxone emerges not only as an emergency medicine for opioid overdose but a technology shaped by a mode of attention to ensuring recipients are properly cared for beyond the immediate reversal of overdose. First, we analyse how the technology emerges in and affords a regime of care designed to allow a terminally ill man to consume opioids and reduce the likelihood of fatal overdose. Second, we analyse how take-home naloxone affords an explicitly political process of administration in which one consumer cares for other consumers by, in his words, administering it 'gently' and with a sensitivity for care beyond overdose reversal. Together these two cases demonstrate the utility of approaching take-home naloxone through the politics of care.

Case study 1, Gabrielle: Caring, choice and intimacy

Our first case study emerges from Gabrielle's[ii] account of administering naloxone to her partner, Jeremy. Gabrielle is a 48-year-old nurse living in Melbourne, Victoria. She began consuming heroin when she was 15 years old, then largely stopped in her late-30s, only beginning again seven months prior to our interview in 2017. Alongside the heroin she consumes weekly, Gabrielle is also on methadone maintenance treatment. Gabrielle has administered take-home naloxone many times, but it is her description of giving it to Jeremy that we explore here. Jeremy is terminally ill with cancer. He also consumes heroin and, as she explains, his illness magnifies the intoxicating effects and risk of overdose, something of which Gabrielle is acutely aware. Importantly for our analysis, Gabrielle explains that Jeremy's health status makes him ambivalent about revival from overdose. This set of circumstances creates a complex interpersonal arrangement around a technology nominally intended for the straightforward purpose of reversing overdose. As Gabrielle explains:

> I've got a living will from him, which he specifically states, not to be brought back [if he overdoses] […] We've talked about it and made decisions, like a commitment to each other. So if

> he did [overdose], like if his heart stops and he has stopped breathing, I don't know if I could do it, but I'm not supposed to bring him back.

Jeremy's living will, and Gabrielle's role in caring for him within their intimate relationship directly shapes the meaning and action of take-home naloxone; how Gabrielle administers it, why and to what ends.

> With my partner, sometimes he gets very, very intoxicated by it [heroin] and he'll start forgetting to breathe so [that's] … when I give him Narcan[iii]. I don't always give him a full ampoule, [and] I don't wait until he's stopped breathing [completely]. Sometimes I'm just trying to reverse the opiate effects, so I give him a third of an ampoule and that brings him out of it enough for me not to worry about him not breathing. So I don't wait for the overdose in his case. […] I'd hate for something […] to happen and me not hear it and be in the bath and come out to him being in a full-blown overdose, so sometimes it's safer to reverse the effects of the opiate before it becomes a major problem.

Here Gabrielle describes using naloxone in a way quite distinct from its intended use as an emergency medicine and is exceptional in our interviews which generally offered accounts of administration simply to reverse an overdose, indeed, Gabrielle recounted such experiences herself. However, within the interrelationship of care between Gabrielle and Jeremy, naloxone has affordances that it otherwise may not have if, for example, as we will explore below, Gabrielle were attending the overdose of a person she did not know. Gabrielle administers a small amount of naloxone when she notices what she considers to be initial signs of an overdose (Jeremy 'forgetting to breathe') before other symptoms may occur such as loss of consciousness or were Jeremy's heart to stop beating. Here, Gabrielle engages with naloxone's ability to mediate the relationship between heroin dose and safety, that is, to modulate the intoxicating and analgesic effects of heroin and ensure that her partner does not reach the point of losing consciousness. In this way, take-home naloxone is a significant technology for Gabrielle's partner care. Importantly, the role naloxone plays here is a qualitative one. Unlike common binary accounts of naloxone's effects, which tend to emphasise two states, overdose and revival, Gabrielle's engagement with naloxone as a form of care constitutes it as a tool for titrating intoxication:

> I'm not using a full ampoule, because […] he's using heroin to enjoy it and I don't want to completely reverse it […] I just need to take the edge off it and straighten him up a bit [then] he goes back to a level of being stoned, but not quite as stoned as he was before. And then I can relax.

Via naloxone, Gabrielle is able to pay careful attention to Jeremy's bodily state, his level of intoxication and his health. She articulates a very careful and caring process that requires a mode of attention reliant on a complex of elements including, among other things, their intimate relationship, their living arrangement and access to and particular use of take-home naloxone. Importantly, Gabrielle explains that the care she takes in using naloxone in this way arises partly from a strong wish to avoid having to decide between breaking her agreement with Jeremy or letting him die.

> I don't want to be in that position where I'm making a decision to bring him back or not to bring him back […] I have administered Narcan to him just […] before a complete overdose, because then I'm not breaking my word to him. Like I haven't reversed his death, I've just stopped him dying […] It is a big distinction and he's okay with that.

Following Mol (2008) and Latour (2002), we can argue that the technology of take-home naloxone has afforded change in Gabrielle's ethical landscape and the conditions of possibility of care within her relationship. The affordances of take-home naloxone allow for a distinction between a 'complete overdose' (if Jeremy was to lose consciousness) and stopping death (ensuring Jeremy's breathing remains steady) to be negotiated within their relationship. Gabrielle pays careful attention to her partner's state of intoxication, actively mediating the effects of the heroin he consumes to ensure his safety. This allows him the pleasures of heroin consumption but also ensures that Gabrielle does not have to make a very difficult choice. Gabrielle's account illuminates the ways in which naloxone access affords a specific regime of care, as well as the ways in which the technology itself, what it does and is used for, also takes shape within these specific caring conditions of possibility. The subjectifying effects of take-home naloxone are also evident here. The technology affords programs of action that Gabrielle may or may not adopt (Latour 2002) in that there may be lasting effects for her were she not to administer (including professional and even legal issues) and lasting effects for her relationship when she does. Understanding

the complex relations between technology, subjectification and care through cases such as this one help us move closer towards understanding the complexities of why and how and under what conditions take-home naloxone might be taken up and administered and those in which it might not.

Case study 2, Dylan: Gentle naloxone administration

Dylan's account offers our second case study demonstrating the co-production of take-home naloxone and care. Dylan is aged 33, currently unemployed, and volunteering for a peer-led harm reduction organisation in Melbourne, Victoria. Having started consuming heroin about six years prior to his interview, Dylan describes himself as a 'poly drug user'. At present he consumes heroin weekly, usually with friends 'on the streets' who sometimes offer him a 'taste' (small amount of heroin) in exchange for fresh injecting equipment. Dylan, who has revived people with naloxone many times, has an explicitly political approach to take-home naloxone and harm reduction and began the interview by arguing that there was much more governments could do to reduce overdose deaths. Dylan was very supportive of take-home naloxone distribution, but was critical of the naloxone administration practices of paramedics. According to Dylan, paramedics responding to opioid overdoses often cause painful withdrawal sensations by administering too much naloxone too quickly. In contrast, Dylan draws on strategies he learnt in overdose response training conducted by a peer-run drug consumer organisation, carefully titrating the dose of naloxone to revive the person more 'gently':

> In training, we're taught to give one vial at a time; each vial being 0.4 milligrams or micrograms, I'm not sure. So we're taught to give one of those every two minutes until the person responds or until medical help arrives. I'm aware that ambulance officers give between five and six times the dose that we're taught to give and a lot of the time it snaps people straight out of it, but it then sends them into instant withdrawal. They get really narky [angry and frustrated] […] We're taught to try and do the gently-gently approach and I wish somebody would notify Ambulance Victoria that there's a better way of reversing an opiate overdose than just jabbing people full of naloxone and sending them into withdrawal.

For Dylan, while revival is the primary goal of naloxone administration (in this sense his account reflects almost all the others collected in this research), he makes an effort to achieve this without causing pain and discomfort (e.g. using an appropriate dose and titrating). For Dylan, the frustration and distress that take-home naloxone administration can cause (e.g. Richert 2015) can be avoided, simply by administering naloxone with the right care.

To contrast his own administration practices with those of paramedics Dylan offers an account of the first time he administered naloxone:

> It was the gently-gently approach, and I was like, 'Hey, I just want to let you know, you had a bit of an overdose, I've given you some Narcan, you're fine now, it'll wear off in an hour. Just because you feel straight now, please don't go and buy anything [opioids] for the next hour. Just wait and let it kick back in and see if you need anything more.' [The response was:] 'You did not give me Narcan. I don't feel like I've been Narcanned at all.' It's like, 'Darling, look at the mess next to you on the ground, there's broken open Narcan vials, there's two needles with sharps tips attached. If I didn't give you Narcan, why is that stuff lying there?' 'You're just bullshitting, you didn't give me Narcan.' 'Yeah, I did, but if you choose to believe otherwise, then you're welcome to.' And that sort of approach, like even though she didn't believe I'd just given her something that potentially saved her life, as opposed to if I'd done what the ambulance do and broken open all five vials and given them to her all at once, I potentially could have walked away with a black eye.

In this set of caring relations, take-home naloxone takes shape and affords capacities and actions quite different from those we analysed between Gabrielle and Jeremy. Here, Dylan uses naloxone in keeping with its intended use as an acute emergency medicine for overdose. Yet, like Gabrielle, his gently-gently approach enacts a much more specific caring mode of attention than suggested in Dylan's description of the administration practices of paramedics. Rather than focusing on revival alone, Dylan takes care to treat the person without causing undue discomfort. The issue of discomfort is particularly important here, as research suggests previous negative experiences of naloxone revival can discourage people from both

administering naloxone and receiving it (Neale & Strang 2015). The way Dylan contrasts his own practices and those of paramedics is essential here. For Dylan, if naloxone is not administered in a gentle and caring manner it may cause suffering and negative interactions with emergency services. Importantly, this may reduce the desire to access the technology in the future. Of course, being administered with naloxone without using Dylan's caring gently-gently approach and therefore having one's life saved is preferable to no action at all, but Dylan's point is that the effects of careless administration can be very negative, and potentially self-defeating where increasing uptake and diffusion are wanted. As has been identified in other research, unless naloxone is administered with the appropriate care, the life-saving affordances of naloxone administration may be needlessly experienced as only sickness, shock, or punishment (Neale & Strang 2015).

Importantly, as in Gabrielle's case study, Dylan's account also emphasises the subjectifying effects of human-technology affordances (Latour 2002). For example, during a separate event of successful take-home naloxone administration Dylan interacted with paramedics. As he explains, the paramedics questioned the legitimacy of his administration. As above, he recounts the events as a conversation:

> The [paramedics'] first reaction was, 'Where'd you get the Narcan from? How'd you come across Narcan? Are you authorised to give it out? Are you an authorised administrator of Narcan?' and I'm like, 'Yeah, and I believe half the people walking around us also carry it and are authorised.' 'By whose authority?' 'By the authority of [peer-led harm reduction service] and by the authority of the State Health Department as I'm listed with them as a needle and syringe program outreach worker'. And they didn't seem to have any response for that.

In this exchange we can see that having access to naloxone affords a particular subjectivity, one in which Dylan takes on the role of life-saver, someone able to care for others in his local community, gently bringing them back from overdose. While unpleasant or uncaring interactions with emergency services personnel can act as deterrents to responding to overdoses, in Dylan's case access to take-home naloxone and the expertise he developed via training afford a degree of authority in his response to health professionals. Unable to find secure employment, he can nevertheless enact a demarginalised subjectivity

through his important community role. While Dylan has very limited access to material resources, the take-home naloxone technology offers not only the capacity to care but the power to do so (Martin, Myers & Viseu 2015). Of course, take-home naloxone technologies do not determine or guarantee new subjects, but as research on the affordances of other drug-related practices and objects (such as injecting fitpacks) has suggested, they can make them 'slightly more imaginable' (Fraser 2013).

The conditions of possibility of care

The two case studies of overdose response presented here emphasise the heterogeneity of the affordances of take-home naloxone. In attending to the specific meanings and practices of administration, we become aware that the technology is not solely a mechanism for distributing a medicine for use in opioid overdose emergencies. Instead, what take-home naloxone 'is', how it is used, what it 'does', and to what end, emerge out of interpersonal relationships of care. In the two cases we see take-home naloxone emerge as a way of caring for a terminally ill loved one within a very complex arrangement of care. We also see that even when used more conventionally (as, it should be again noted, almost all of our participants described), it can again form part of an ethics or politics of care. In both cases, naloxone is shaped by a sensitivity that extends beyond revival. That said, it is essential to acknowledge the differences between these accounts too, as they emphasise the importance of accounting for the conditions of possibility of care. Gabrielle recounts an arrangement afforded by access to a private residence, a long-term intimate relationship and medical training as a nurse. This set of relations supports her capacity to become carefully attuned to another's embodied reactions and corporeality. For many of the participants in our research, and many targets of overdose response training and take-home naloxone, this set of relations does not exist. Yet, Dylan's gentle administration approach emphasises that even within relations that may present limited affordances non-medically trained people, including those who consume opioids, can and are responding to overdose in a careful and sensitive manner.

Of course, analysing the conditions of possibility of care raises questions about the position of take-home naloxone within broader paradigms of public health, social inequality and power. It is valid to ask, for

example, whether and in what ways take-home naloxone provision engages with the criminalisation of people who consume drugs, or addresses other harms produced under prohibition. Indeed, other analyses in this area may investigate conduct that appears uncaring, yet, interpretation is key here and take-home naloxone initiatives operate within social conditions that produce and restrain specific care practices, an issue requiring more research. If a primary public health response to increasing overdose rates is to resource people who consume opioids with naloxone and ask them to treat each other, it could be that we risk ignoring the contexts of marginalisation in which the overdoses occur in the first place, and which actually facilitate them. We might also risk justifying the responsibilisation of those with relatively little power and resources to care (Farrugia, Fraser & Dwyer 2017). These questions must not be neglected, but neither should the agency of people who consume heroin and other licit and illicit opioids, for whom naloxone is a way to directly intervene in overdoses and save lives. Perhaps instructive for those inclined to dismiss people who consume heroin as socially disruptive and uncaring, Dylan's overdose response techniques are highly considered, even in highly stressful situations that unfold on the street. Even under difficult conditions, Dylan is able to put naloxone to work in such a way as to save lives *and* take care of others in an explicitly political manner. His account suggests that, when informed by the necessary intentions, a nuanced care practice is both possible and preferable.

Conclusion: Towards a politics of care

In our analysis we have argued that take-home naloxone is much more than the provision of a pharmaceutical drug that can be injected into a body to reverse overdose. In addressing larger questions about uptake and diffusion of the technology in Australia, we have sought to show that it allows far more complex affordances than this, and that care is a key one. In making this argument it is not our intention to assert that Gabrielle's actions are widespread, or to unreflexively accept Dylan's criticisms of paramedics. Rather, it is to approach take-home naloxone in ways that do not divorce opioid overdose from the social relations that give rise to it. Feminist STS and other sociological research on health has analysed the politics of the provision, uptake and experience of care in a range of contexts (e.g. Buse, Martin & Nettleton 2018, Puig de la Bellacasa 2017, Gill, Singleton & Waterton, 2017). This rich area of

scholarship emphasises that care is a multiple, complex and contested concept that cannot be approached as a stable practice or experience (Latimer 2018). By introducing care into an analysis of this technology specifically we emphasise that naloxone offers new possibilities for action that co-produce the practical and ethical frameworks of existence for people who consume opioids, their families and friends. These affordances also have implications for the ethical frames governing alcohol and other drug research, policy and health professionals' practices (Latour 2002, Mol 2008). To this end, drawing these cases together, we have developed a politics of care approach to analysing the multiple affordances of take-home naloxone present in the accounts of our participants. The dynamics mapped in this article via the politics of care have at least three implications for policy, practice and service provision.

1. A politics of care approach to administration may not only improve individual experiences of revival but may advance naloxone's reputation and encourage uptake (Strang et al. 2018).
2. A politics of care approach emphasises social relations which is especially important in a context in which those affected are heavily stigmatised and constituted as lacking meaningful relationships (Fomiatti, Moore & Fraser 2017).
3. A politics of care approach holds political issues of marginalisation, material resourcing and stigma at the centre of analysis. This is critical for any response to opioid overdose in that broad changes are required to address the social arrangements that both produce overdose risk and deter naloxone use.

As Martin, Myers & Viseu (2015) remind us, 'care is not only a practice and an outward action but also a willingness to respond' (634). Gabrielle and Dylan respond carefully to the ways opioid overdoses emerge in their lives and the multiple affordances take-home naloxone offers to reduce suffering and avert death. A politics of care approach to take-home naloxone may also encourage overdose response strategies that work within reciprocal interpersonal relations and obligations and reduce the likelihood that naloxone is experienced as uncaring. Care and the saving of lives are of course co-produced concerns, and in emergency situations ways of enacting them may be limited. Here we emphasise the multiplicity of take-home naloxone and its many engagements in relations of care, and interpersonal relations more generally.

In this way we hope to increase sensitivity to the capacity for technologies such as take-home naloxone to afford caring by and for all people, including those involved in overdose events.

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Conflicts of interest

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[i] Due to the focus of this article, we confine our methods discussion to consumer participants.
[ii] To preserve anonymity, all participants' names in this article are pseudonyms.
[iii] Naloxone is often referred to as Narcan®, a brand name it is sold under.